

REMARKS

Reconsideration and allowance of this application in view of the above amendment and the filing of an RCE is respectfully requested.

Claims 1-4 and 6 have been rejected under 35 USC 102 as anticipated by Fukushima et al (6346929) while claims-79, 11-13, 15-19 and 2131 have been rejected under 35 USC 103 as unpatentable over Fukushima in view of Saito et al (5604818).

Claims 1-4, 6, 9, 11 and 12 have been cancelled while independent claims 7, 13, 24, and 28 and dependent claims 15, 22, 23 and 29 have been amended. New claims 32-46 which are fully supported by the original specification, have been added.

The Fukushima reference has been discussed in the amendment filed June 14, 2005, which is incorporated herein by reference with the following comments addressed to the present rejection and the newly cited reference to Saito. The rejection of claims 1-4 and 6 as anticipated by Fukushima has been obviated by the cancellation of claims 1-4 and 6.

As indicated in the amendment filed June 14, 2005, Fukushima '929 detects body part motion and displays video information with a controller being used to display an element for input of the operation instructions and for starting a process which corresponds to the display when the detecting device detects a specified motion corresponding to the display element.

With respect to each of independent claims 7 and 8, applicants traverse the indication that Fukushima uses a scanning detection unit. In fact, figure 12 of Fukushima and its description at column 10 and 11, clearly shows that a CCD device item 165 is used. Fukushima does not recognize that a CCD device is incapable of capturing a retinal reflect image. That is, an image which has been reflected by the irregularly curved retinal because of its focal plane and insufficient sensitivity.

It is to be further noted that all embodiments of Fukushima project electromagnetic radiation onto the user's eye which is exactly the opposite of the last paragraph of claim 7 which indicates that the information system does not project electromagnetic radiation onto the eye during the course of providing information.

The newly applied reference to Saitou '818 functions in a similar manner as Fukushima with respect to the electromagnetic radiation because not only does Saitou project electromagnetic radiation onto the eye to determine the orientation (steps 420 and 450 in figure 4 as well as item 102 and 103 in figure 1) but he also provides electromagnetic radiation onto the users eye in the course of providing information to the user by way of the visible cursor (step 540 in figure 4 as well as columns 6 lines 36-49).

In addition, applicants still is not able to understand the examiner's indication of a teaching in Fukushima at column 11, lines 1-37 with regard to at least partial capture of the retinal reflect image during a scanning operation and

a less comprehensive capture of the retinal reflect image in another scanning operation as specifically detailed at claim 8 and described in applicants specification at page 19, second paragraph. As indicated above, applicant is not able to appreciate any scanning operation in the teaching of Fukushima .

With respect to the amended independent claim 13, it is submitted that the cameras of Fukushima as addressed at item 9 of the office action do not capture signals reflected back from an eye or which emanate from the eye. Claim 13 recites that one of the signals is an optical signal in a first spectral range and another signal is an optical signal in a second spectral range that does not overlap the first spectral range. This feature has been added to claim 13 in order to more clearly define over the references. In order to reject claim 24, it appears that the examiner has interpreted the claim as passively and unintentionally capturing a retinal reflect image in its capture of a corneal reflect image. Claim 24 has been amended to now specifically recite that the information system extracts image information pertaining to the natural scene ambient to the users eye from the retinal reflect image and that the information systems includes a camera that captures optical signals from the natural ambient scene. As advantage of this arrangement is the ability to correlate image information obtained from the retinal reflect image with the camera image and that the retinal reflect image can then be used to determine the true orientation of the users eye relative to the ambient scene. No teaching or suggestion of the image information from a retinal reflect image is shown by

Fukushima and furthermore it does not anticipate the benefits of such a combination with a camera image.

Independent claim 28 has been amended to recite “physical retinal structure” instead of “retinal characteristics”. Additionally, amended claim 28 recites that the information system extracts image information of the physical retinal structures. These amendments make it clear that claim 28 employs the physical structures of the retinal (macula and capillary structures) and not the overall reflectivity of the area as taught by Saitou at column 5 lines 26-31, to determine the orientation of the eye.

Furthermore, a benefit of the approach taken by the invention defined by claim 28 is that both the physical retinal structure and the camera image of the ambient scene are obtained in the same frame of reference (the information system). Therefore the orientation of the true line of sight relative to the ambient scene can be easily determined. The center of the pupil is not necessarily indicative of a users true line of sight and cannot be determined with sufficient accuracy to pinpoint a user’s current object of interest in the ambient scene.

Newly added claim 33 specifically recites that at least one of the signals captured after reflection on the eye is an acoustic signal. It is submitted that this feature is not available from Fukushima, Saitou or any known prior art.

Independent newly added claim 35 concerns an information system having two specifically claimed major features including an eye-tracker based on the

physical structures of the retina and an optical signal capturing unit which captures light from the natural scene ambient to the eye. These features serve to support the benefits discussed with respect to independent claim 28 and these features are not available from the references or their combination.

Newly added independent claim 45 concerns an information system which optically “tracks” the orientation of a projection unit relative to a natural ambient scene to allow for projection of visible images onto an eye in a manner perceived as being in registration with the natural ambient scene. Fukushima uses cameras which do not “register” a projected image with a natural ambient scene. To the contrary, Fukushima has cameras which either are used as input devices for inputting instructions as described, column 6, lines 1-21 of Fukushima or the cameras are used to provide the user with a view of the ambient scene as described at column 3, line 67 column 4, line 4.

It is to be noted that although column 12 lines 51-62 of Fukushima may appear to suggest a desire for registration between a projected visible image and a natural ambient scene, in fact Fukushima does not teach or suggest how this objective can be accurately achieved and it is submitted that the present invention defines subject matter which is supported by the specification to achieve an objective not shown or disclosed by Fukushima.

Dependent claim 41 limits claim 35 by indicating that the information system is adapted to project no visible light onto the eye. Claim 42 limits the configuration of the information system to project no light onto the eye thus

providing optical signals from the eye in a merely passive manner. Dependent claim 44 employs a scanning detection unit for the information system which is particularly useful when the eye is in motion.

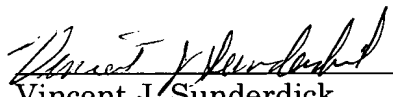
Therefore, in view of the distinguishing features between the claimed invention and the references which features are not shown or disclosed or made obvious by the references or their combination. Applicants respectfully request that this application containing claims 7-8, 13, 15, 21-24, 27-29 and 32-46 be allowed.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #101795.56303US).

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Respectfully submitted,



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